From: Blend, Jeff
To: Suplee, Mike; Laidlaw, Tina
Subject: Notes for tomorrow
Date: Monday, September 23, 2013 12:27:52 PM
Attachments: Variance Remedy development.docx

Mike and Tina:

Attached are some notes and text from various documents up on the NWG website. The text in red are comments/questions by me or words I added. The last section, the remedy steps, I wrote. Please read before tomorrow's meeting if you can.

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From *DEQ Circular-12*

Permitees receiving a general variance are required to evaluate current facility operations in order to optimize nutrient reduction with existing infrastructure and shall analyze cost-effective methods of reducing nutrient loading, including but not limited to nutrient trading without substantial investment in new infrastructure (§75-5-313[9][a], MCA). The Department encourages permittees to examine a full array of reasonable options including (but not limited to) reuse, recharge, and land application. The Department may request the results of the optimization/nutrient reduction analysis within two years of granting a general variance to a permittee.

Question: So just meeting 10 and 1 is not enough for the General Variance. Permittees also have to optimize and find additional ways to reduce nutrients including reuse and trading and perhaps land app at certain times of year..

A permittee, using the assessment process referred to above, must also demonstrate to the Department that there are no reasonable alternatives (including but not limited to trading, compliance schedules, reuse, recharge, and land application) that would allow compliance with the base numeric nutrient standards.

We already did this with the two EPA studies, right? They should not have to do this for a general variance.

From *Analysis of Montana Numeric Nutrient Standards and Variance Issues*

The central goal [of variances] is to assure that dischargers are doing what can reasonably be done to maximize interim loading reductions while collectively moving toward the longer term goal of ultimately attaining the underlying standard where possible.

[It is the] goal of MDEQ to implement individual variances on a case-by-case basis where appropriate to address unique impacts for permittees who cannot meet general variance requirements.

With regard to reasonable alternatives, including trading, broader flexibility in utilizing individual variances would expand possibilities to consider and implement innovative source control and watershed-wide pollution management strategies (called for under Section 2 but not section 5) for a larger class of permittees with resulting variance requirements that might be both less expensive and more effective in achieving long-term nutrient reductions.

Presently there seems to be a wide spectrum of options that could include reasonable alternatives either to compliance with base standards, meeting general variance requirements, or simply whatever is available to avoid the need for an individual variance.

DEQ will review each individual variance application to determine if there are "reasonable alternatives" to the variance such as trading, permit compliance schedules, general variances, alternative variances, or alternative effluent management loading reduction methods such as reuse, recharge, or land application that "preclude" the need for an individual variance.

Section 9 goes on to state that permittees receiving variances "shall evaluate" current operations to optimize nutrient reductions with existing infrastructure

If widespread impacts are also demonstrated, then a permittee is eligible for an individual variance after having demonstrated to the Department that they considered alternatives to discharging (including but not limited to trading, land application, and permit compliance schedules).

In cases where substantial and widespread economic impact has been demonstrated per methods outlined here in **Section 3.0**, the Department expects that in most cases the discharger (both public and private) will propose to the Department some level of effluent improvement beyond that which they are currently doing, but less stringent that the general variances concentrations (which are now in statute at §75-5-313, MCA, and which will later be adopted as Department rules in 2016). A likely scenario would be that the discharger could implement a treatment technology one level less sophisticated than that required to meet the general variance concentrations. Basic definitions for different treatment levels are found in Falk et al. (2011); through 2016 the general variance requirement for dischargers > 1 MGD corresponds to level 2. When the discharger and the Department have come to agreement on the level of treatment required, the treatment levels will be adopted by the Department following the Department's formal rule making process, and documented in Circular DEQ-12, Part B.

Problem: One level less sophisticated than WERF level 2, the general variance, is WERF level 1 which is no N and P treatment. Unless, this refers to technology.

Development and implementation of optimization studies and nutrient reduction analyses under individual, general and alternative variances required under section 9 of SB 367 potentially offer a good basis for demonstrating the variance program's emphasis on supporting incremental progress toward highest attainable uses. However, current DEQ-12 guidance on wastewater facility optimization studies appears to be drafted in a way that would limit focus of optimization studies and nutrient reduction analyses only to changes in O&M and would seem to automatically preclude any evaluation of possible structural changes that might support existing treatment system optimization. The language of Section 9 appears to emphasize no "substantial investment in new infrastructure". Encouraging flexibility to allow consideration of both O&M and possible low-cost upgrades to existing infrastructure that could facilitate optimization of

current systems may be important in demonstrating commitment to continued incremental progress.

Several of the essential variance elements outlined above are relevant to supporting the general variance in SB 367. First, substantial and widespread economic impacts must be demonstrated under Part 131.10(g)(6). Second, the variance must identify and provide a technical (and economic) basis for the specific alternative numeric criteria that will apply. And, third, the variance must be established as close to the underlying numeric criteria (or general variance) as possible to show both that the highest attainable use is being realized and that further incremental progress towards the underlying standard is occurring.

then the third element addresses the core objective of a temporary variance that end-of-pipe concentrations have been established to assure that the highest attainable interim use is actually being achieved while the variance is in place, and that reasonable incremental progress toward the baseline standard will take place.

DRAFT 7.3--Carrying Out a Substantial and Widespread Economic Analysis for Individual Nutrient Standards Variances AND Guidelines for Determining if a Waste Water Treatment Facility Can Remain at a Previous General Variance Concentrationan Individual Variance Based on Water Quality Modeling

If a permittee has demonstrated that substantial and widespread economic impacts would occur if they were to comply with the base numeric nutrient standards, and there are no reasonable alternatives to discharging, then the cost the permittee will need to expend towards the pollution control project will be based on a sliding scale (Figure 2-1). The cost cap is determined as a percentage of the community's MHI, and the key driver of the cost cap is the secondary test (secondary score) calculated in step 4 of Section 2.1.

For example, a community has demonstrated that substantial and widespread economic impacts would occur from trying to comply with the base numeric nutrient standards, and there were no reasonable alternative to discharging. If the permittee's average secondary score from the secondary tests was 1.5, then the annual cost cap for the pollution control project (including current wastewater fees) would be the dollar value equal to 1.0% of the community's MHI at the time that the analysis was undertaken (see blue line, Figure 2-1). This 1.0% would include existing wastewater costs plus new upgrades. If this community was already paying 1.0% or greater MHI for its wastewater bill, then no additional monies would be spent (and no additional significant upgrades would occur) under the individual variance. But, optimization would still occur

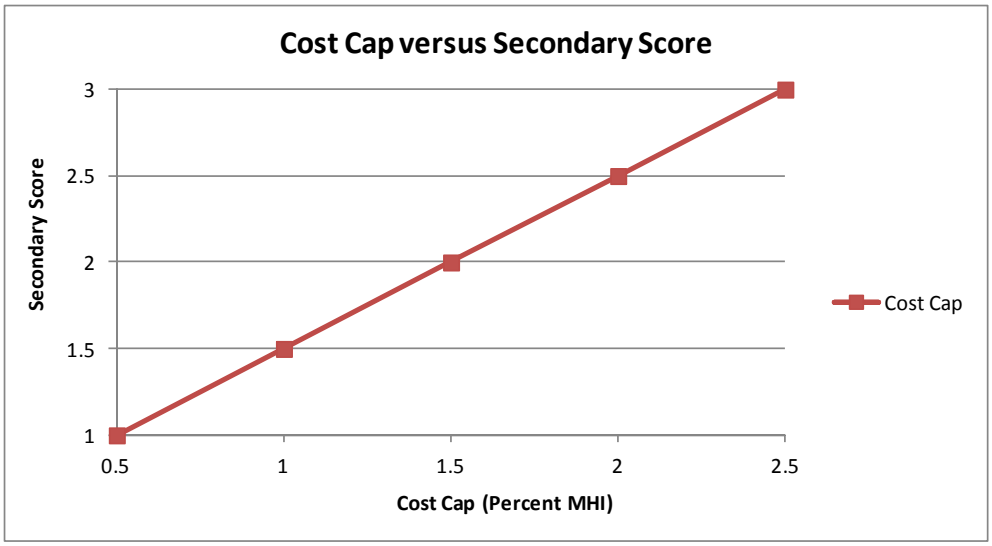

Figure 2-1. Sliding scale for determining cost cap based on a community's secondary score.
The horizontal axis represents percentages of a community's median household income (MHI) that the community would be expected to expend towards the pollution control project as a function of the secondary score shown on the vertical axis.

It should be noted that the final cost of the engineering project may not exactly match the dollar value associated with the percent MHI determined via **Figure 2-1** (i.e., the actual project cost could be somewhat lower or somewhat higher than the dollar value equivalent for the percent MHI of the community in question). Engineers should view the dollar value equivalent of the MHI derived from **Figure 2-1** as a target, to help select the most appropriate water pollution control solution for the community. In order to accommodate actual engineering costs for the project, the Department will provide flexibility around the dollar value arrived at via **Figure 2-1**, subject to final Department approval.

When the level of treatment required has been established and accepted by the Department, it will be adopted by the Department following the Department's formal rule making process and documented in Circular DEQ-12, Part B.

In order to satisfy the economic impact component of an individual variance (§75-5-313[2], MCA) permittees must provide the Department approximate estimates of the capital costs, and operations and maintenance costs, which would have been expended in order to upgrade the facility to the new general variance concentrations. The intent is to demonstrate that there were substantial savings in capital costs, materials, fuel, and energy by opting *not* to upgrade the facility. The permittee can compare the cost saved to the MHI of the community, similar to what is done for determining substantial and widespread economic impacts (see steps 1 through 5, **Section 2.2**); however, the Department wants to make clear here that no specific percent of MHI needs to be realized in order for this aspect of the two-part analysis to be satisfied. Capital costs

saved would not include design-related work and overhead. Operations and maintenance cost saved should be estimates of fuel and/or electrical consumption, and other materials (e.g., chemicals). Permittees are not required to carry out a complex analysis comparing the relative economic or social value of one resource (the stream or river) vs. another (e.g., air quality) and then trying to quantify the relative savings. Rather, the Department wants a straight-forward quantification of cost savings associated with the key factors of concern (capitol costs, fuel and electrical consumption, and routine materials such as chemical additions).

Steps in Remedy process

1) Have town fill out S&W
    a. Problem, the S&W should refer to the general variance levels, rather than prove that they cannot meet the base criteria. We already know no one can meet base criteria and the only reason to apply for an individual variance post-SB367 is because you can't meet the general. However, the guidance reads that an individual variance is from the base criteria. Makes no logical sense in real life.
2) Use sliding scale to see where town is via secondary score and MHI
3) Look at what town is currently doing per MHI, current treatment level and current treatment technology
4) Take difference, if any, between current MHI and sliding scale MHI. Calculate that out to whole town over 20 years and see what could be done with that money.
5) Figure out options.
    a. Did the WWTP look at the least expensive options.
    b. Did the WWTP look at altenatives like land app, trading and optimization
    c. Could the WWTP save the money and do something next cycle (with more money perhaps available in the future or better technology)